ICF-C430

SERVICE MANUAL

US Model

DREAM MACHINE

SPECIFICATIONS

Frequency range: FM: 87.6 – 108 MHz
AM: 530 – 1,610 kHz
Speaker: Approx.6.6 cm (2 5/8 inches) dia.
Power output: 100 mW (at 10 % harmonic distortion)
Power requirements:
120 V AC, 60 Hz
For power backup: 9 V DC, one 6F22 battery
Battery life: Approx. 35 hours using the Sony S-006P(U) battery
Dimensions: Approx. 224 × 58 × 151 mm (w/h/d) (8 7/8 × 2 3/8 × 6 inches) incl. projecting parts and controls
Mass: Approx. 650 g (1lb 7oz) not incl. battery

Design and specifications are subject to change without notice.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

FM/AM CLOCK RADIO

SONY®

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety check before releasing the set to the customer: Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5mA (500 microampers). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig.A)

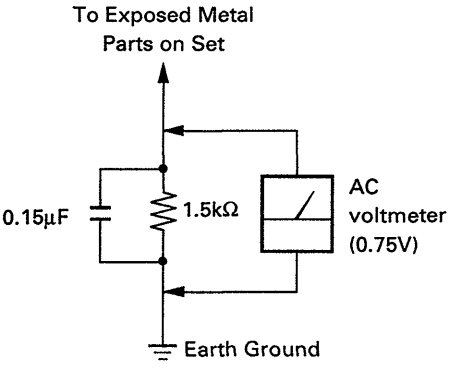
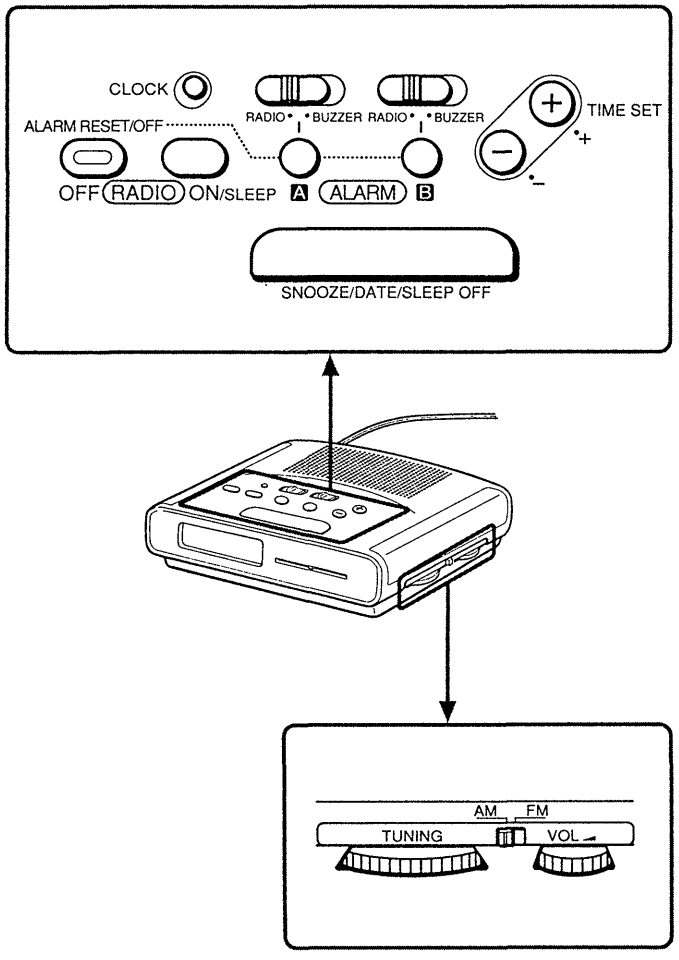


Fig. A. Using an AC voltmeter to check AC leakage.

SECTION 1
GENERAL

This section is extracted from instruction manual.

Parts Identifications



Features

- Dual alarm
- Date display
- Forward/reverse time setting
- Full power backup to keep the clock and the alarm (radio and buzzer) during a power interruption with a 6F22 battery (not supplied) installed.

Setting the Alarm

To set the radio alarm, first tune in a station and adjust the volume.

1. While holding down the **ALARM A** or **B** button (for example, **A** for the radio or **B** for the buzzer), press either + or – under **TIME SET** till the desired time appears in the display. When you release **ALARM A** or **B**, the **ALARM A** or **B** indicator stops flashing and lights up, and the current time appears in the display.
2. Set the **ALARM A** selector (for radio) to **RADIO** or **ALARM B** selector (for buzzer) to **BUZZER.**
   The alarm will come on at the preset time and automatically turn itself off after 59 minutes.

- If you set **ALARM A** and **ALARM B** at the same desired time, only **ALARM A** will work.
- To shut off the alarm, press **RADIO OFF/ ALARM RESET/OFF.**
  The alarm will come on at the preset time the next day.
- To cancel either alarm, while holding down the **ALARM A** or **ALARM B** button, press **RADIO OFF/ALARM RESET/OFF.**
- To doze for a few more minutes, press **SNOOZE/DATE/SLEEP OFF.**
  The alarm will shut off, but will come on again after about 6 minutes. You can repeat this process as many times as you like.
- To adjust the radio alarm volume, turn the **VOL** dial.
- To check the preset time, press **ALARM A** or **B.**

Setting the Clock and the Date

Setting the Clock

1. Plug in the unit.
   The display will flash "AM 12 : 00".
2. While holding down **CLOCK**, press either + or – under **TIME SET** till the correct time appears in the display. When you release **CLOCK**, the clock begins to operate.

• To set the current time rapidly, keep pressing the + or – button to advance or return to a time that is within a few minutes of the current time. Then press the + or – button to set the time to the current time.

Setting the Date

1. While holding down **SNOOZE/DATE/ SLEEP OFF**, press either + or – under **TIME SET** till the correct date appears in the display. Then, release **SNOOZE/ DATE/SLEEP OFF.**

• To display the date, press **SNOOZE/DATE/ SLEEP OFF**. The display returns to the current time when you release **SNOOZE/DATE/SLEEP OFF.**

Setting the Sleep Timer

Enjoy falling asleep to the radio using the built-in sleep timer that shuts off the radio automatically at a preset time.

1. Press **RADIO ON/SLEEP**.
   The radio turns on. It will go off after the preset time has passed. You can set the sleep timer of 90, 60, 45, 30 or 15 minutes.
   Every push changes the display as follows.

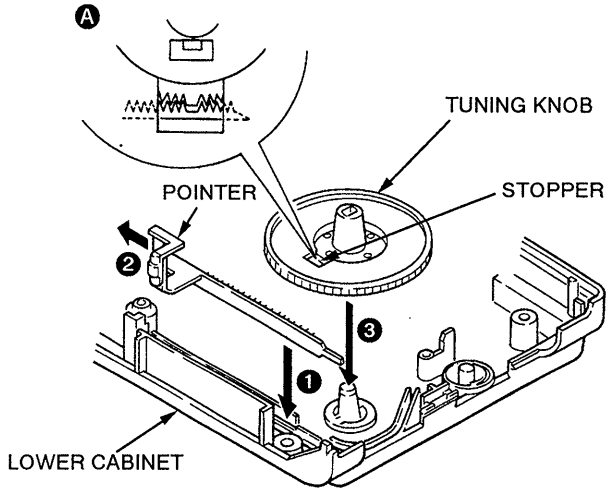
   Current time → On → 90 → 60 → 15 → 30 → 45 →

   The radio will play for the time you set, then shut off.

• To turn off the radio before the preset time, press **SNOOZE/DATE/SLEEP OFF.**

SECTION 2
DIAL POINTER SETTING

2-1. DIAL POINTER SETTING

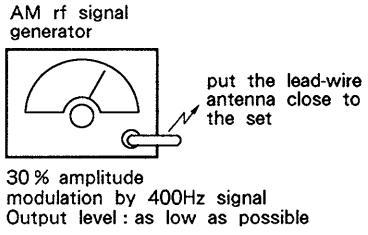


❶ Fit the gear part of pointer to cabinet groove and hook installing claw while toking pointer output of cabinet.
❷ Move pointer in the direction of arrow fully.
❸ Instoll the gear part of stopper and the gear part of pointer as show in the drawing Ⓐ.
Make sure to fit the stopper to the cabinet hole.

SECTION 3
ELECTRICAL ADJUSTMENTS

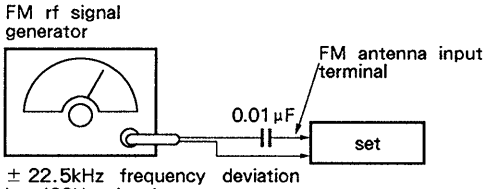
AM SECTION

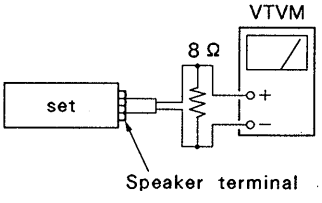
Setting :
BAND select switch : AM


AM rf signal generator
put the lead-wire antenna close to the set
30 % amplitude modulation by 400Hz signal
Output level : as low as possible

FM SECTION

Setting :
BAND select switch : FM


FM rf signal generator
FM antenna input terminal
0.01 µF
set
± 22.5kHz frequency deviation by 400Hz signal
Output level : as low as possible



AM IF ALIGNMENT	
Adjust for a maximum reading on VTVM	
T1	455kHz

AM FREQUENCY COVERAGE ADJUSTMENT	
Adjust for a maximum reading on VTVM	
L6	520kHz
CT4	1, 650kHz

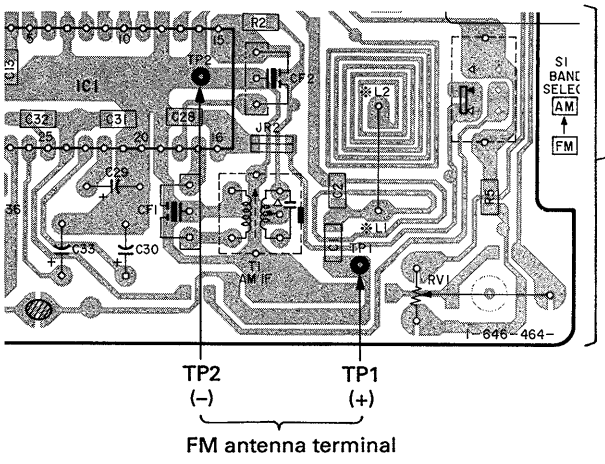
AM TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM	
L3	680kHz
CT1	1, 320kHz

FM FREQUENCY COVERAGE ADJUSTMENT	
Adjust for a maximum reading on VTVM	
L5	86.5MHz
CT3	109.5MHz

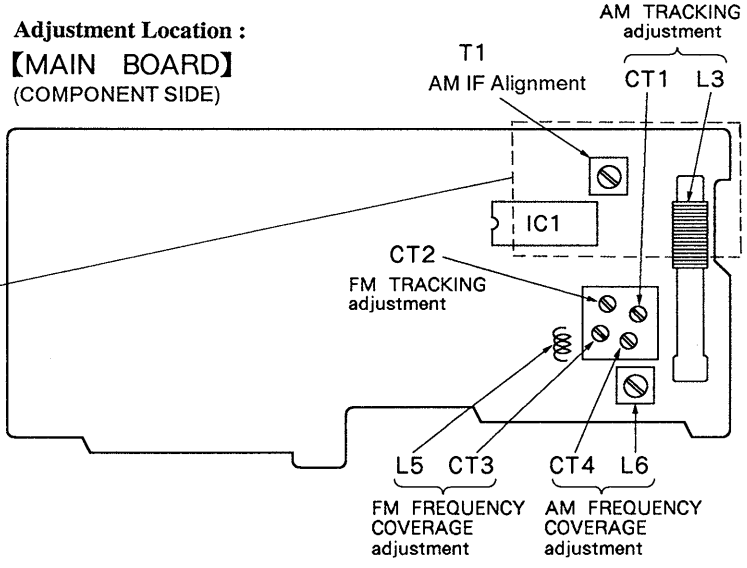
FM TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM	
CT2	109.5MHz

Adjustment Location :

【MAIN BOARD】
(CONDUCTOR SIDE)



【MAIN BOARD】
(COMPONENT SIDE)



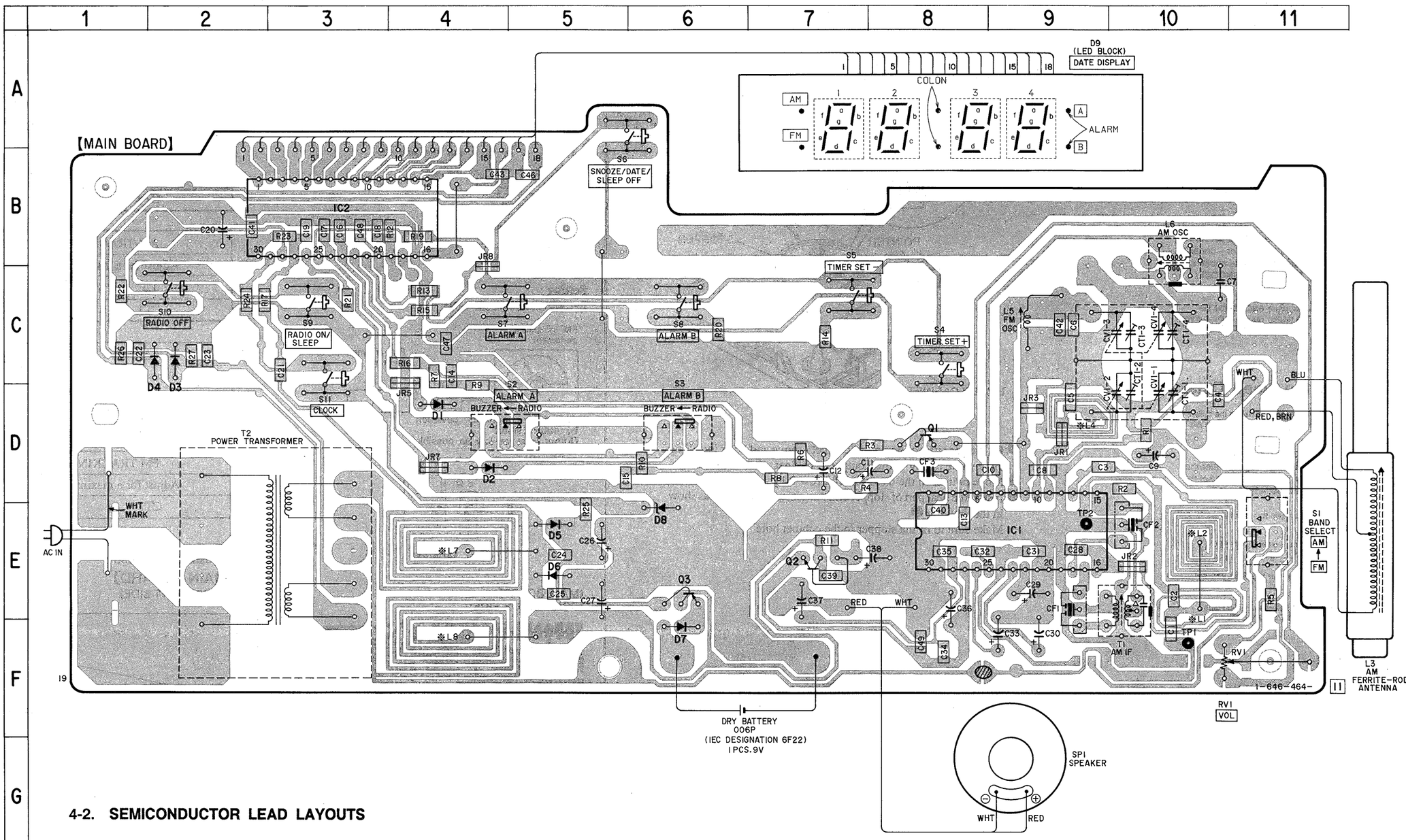
- Repeat the procedures each adjustment several times, and the frequency coverage and traking adjustments should be done by the trimmer capacitors.

SECTION 4
DIAGRAMS

4-1. PRINTED WIRING BOARD

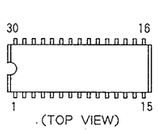
● **SEMICONDUCTOR LOCATION**

Ref. No.	Location
D1	D-4
D2	D-4
D3	C-2
D4	C-2
D5	E-5
D6	E-5
D7	F-6
D8	E-6
D9	A-9
IC1	E-9
IC2	B-3
Q1	D-8
Q2	E-7
Q3	E-6

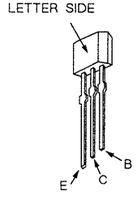


4-2. SEMICONDUCTOR LEAD LAYOUTS

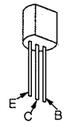
CXA1019S
LC85631



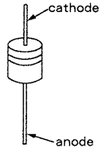
2SA1175-HFE



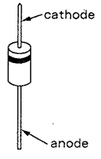
2SC2001-LK



1SS119
MTZJT-955.1A

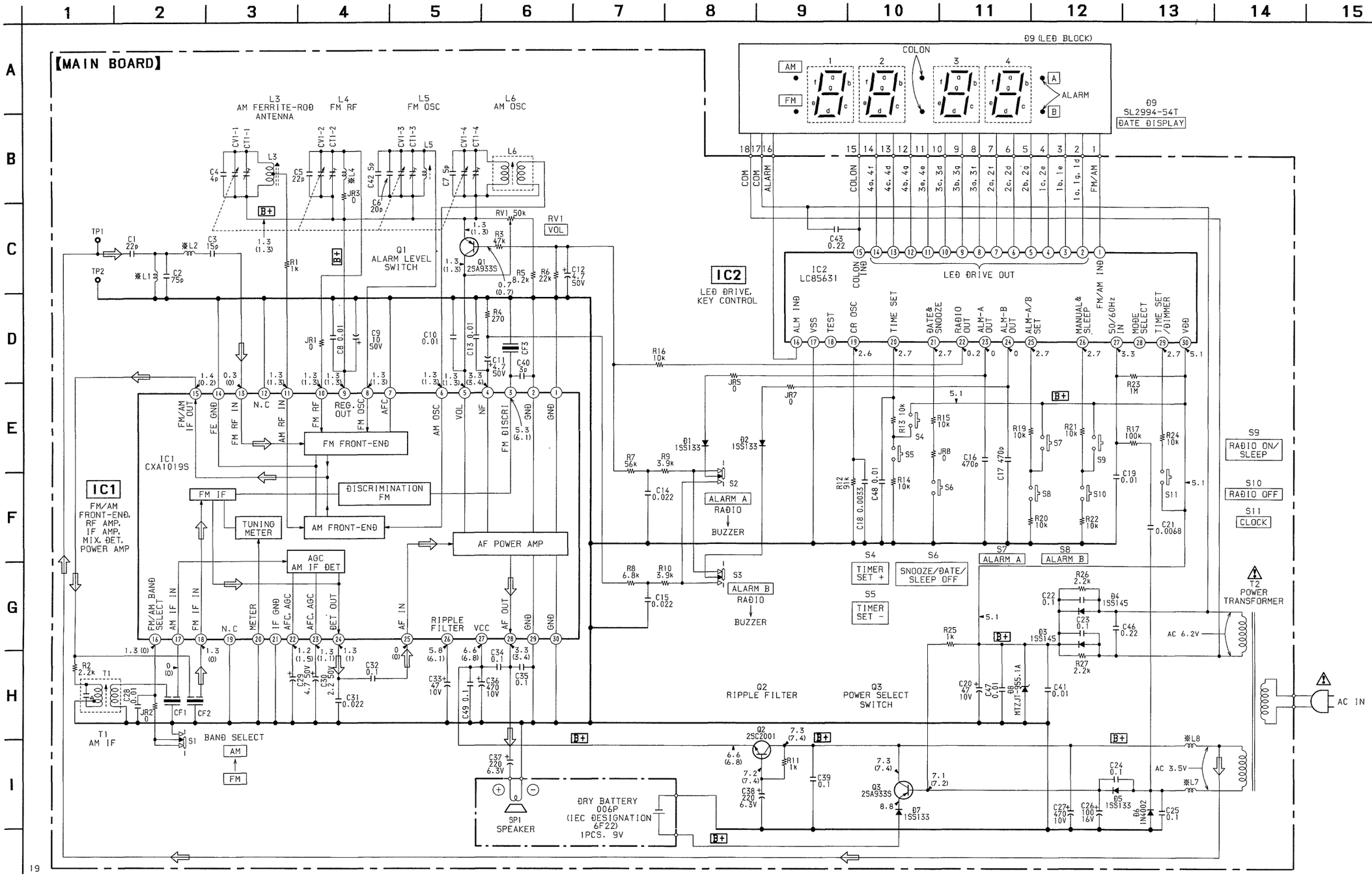


10E2



Notes on printed wiring board:

- ○——: Indicated a lead wire mounted on the component side.
- [ ]: Indicates side identified with part number.
- ▒▒: Pattern from the side which enables seeing.
- ✱ : Printed pattern functions as a kind of coil.



Notes on schematic diagram:

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in ohms, 1/4W or less unless otherwise noted.
- △ : Internal component.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

- B+ : B + Line.
- Voltage are dc with respect to ground under no-signal (detuned) conditions.
- No mark : FM
  ( ) : AM
- Voltages are taken with a VOM (input impedance 10MΩ).
  Voltage variations may be noted due to normal production tolerances.
- Signal path.
  ⇨ : FM
- L1, 2, 4, 7, 8 : Printed pattern functions as a kind of coil.

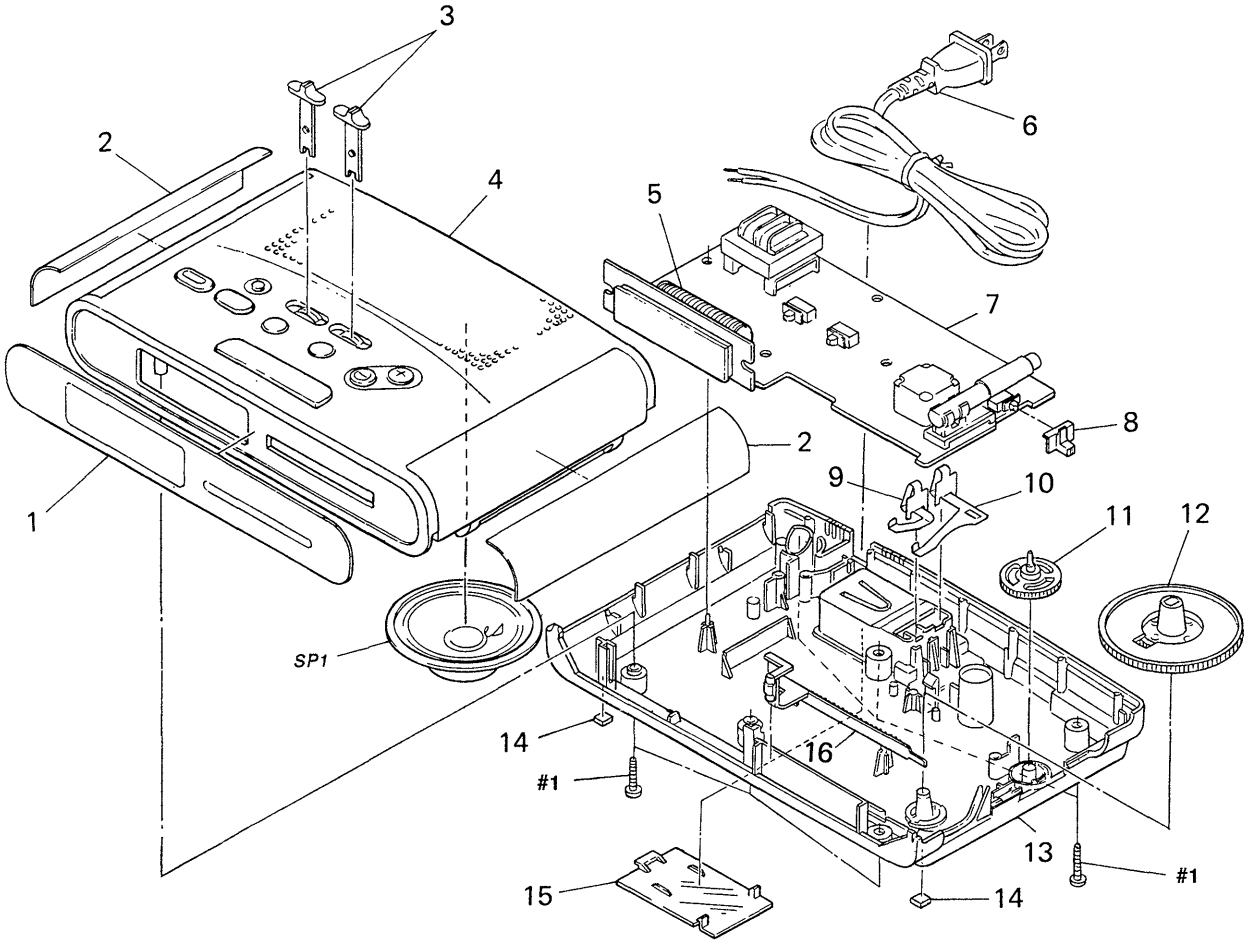
SECTION 5
EXPLODED VIEW

NOTE:

- -XX, -X mean standardized parts, so they may have some differences from the original one.
- Color Indication of Appearance Parts
  Example:
  KNOB,BALANCE(WHITE)...(RED)
  ↑ ↑
  Parts color Cabinet's color
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware(# mark) list is given in the last of this parts list.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

5-1. CABINET SECTION



Ref. No.	Part No.	Description	Remarks
1	3-384-200-01	PLATE, INDICATION	
2	3-369-674-01	PLATE, ORNAMENTAL	
3	3-384-202-01	KNOB (ALARM)	
4	X-3366-496-1	CABINET (UPPER)	
5	1-696-939-11	CORD, CONNECTION (18 CORE)	
⚠6	1-696-008-11	CORD, POWER	
* 7	A-3679-476-A	MAIN BOARD, COMPLETE	
8	3-375-496-01	KNOB (3 BAND)	
9	3-369-678-01	SPRING (BATTERY -)	
10	3-369-677-01	SPRING (BATTERY +)	
11	3-369-134-01	KNOB (V)	
12	3-369-138-01	KNOB (T)	
13	3-385-444-01	CABINET (LOWER)	
14	3-368-852-01	FOOT	
15	3-369-135-01	LID, BATTERY CASE	
16	3-369-675-01	POINTER	
SP1	1-503-082-00	SPEAKER	

SECTION 6
ELECTRICAL PARTS LIST

MAIN

NOTE:

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board name.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms
  METAL : Metal-film resistor
  METAL OXIDE : Metal Oxide-film resistor
  F : nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u : μ, for example :
  uA...: μA..., uPA...: μPA...,
  uPB...: μPB..., uPC...: μPC...,
  uPD...: μPD...
- CAPACITORS
  uF : μF
- COILS
  uH : μH

Ref.No.	Part No.	Description			Remarks
*	A-3679-476-A	MAIN BOARD, COMPLETE			
		**********			
	1-696-939-11	CORD, CONNECTION (18 CORE)			
		< CAPACITOR >			
C1	1-163-165-00	CERAMIC CHIP	22PF	5%	50V
C2	1-163-114-00	CERAMIC CHIP	75PF	5%	50V
C3	1-163-097-00	CERAMIC CHIP	15PF	5%	50V
C4	1-163-087-00	CERAMIC CHIP	4PF		50V
C5	1-163-165-00	CERAMIC CHIP	22PF	5%	50V
C6	1-163-100-00	CERAMIC CHIP	20PF	5%	50V
C7	1-102-942-00	CERAMIC	5.0PF	+-0.5PF	50V
C8	1-163-059-00	CERAMIC CHIP	0.01uF	10%	50V
C9	1-124-907-11	ELECT	10uF	20%	50V
C10	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C11	1-124-927-11	ELECT	4.7uF	20%	100V
C12	1-124-927-11	ELECT	4.7uF	20%	100V
C13	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C14	1-163-033-00	CERAMIC CHIP	0.022uF		50V
C15	1-163-033-00	CERAMIC CHIP	0.022uF		50V
C16	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C17	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C18	1-164-182-11	CERAMIC CHIP	0.0033uF	10%	50V
C19	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C20	1-124-126-00	ELECT	47uF	20%	10V
C21	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C22	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C23	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C24	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C25	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C26	1-126-101-11	ELECT	100uF	20%	16V
C27	1-124-472-11	ELECT	470uF	20%	10V
C28	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C29	1-124-927-11	ELECT	4.7uF	20%	100V
C30	1-124-925-11	ELECT	2.2uF	20%	100V
C31	1-163-033-00	CERAMIC CHIP	0.022uF		50V
C32	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C33	1-124-126-00	ELECT	47uF	20%	10V
C34	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C35	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C36	1-124-472-11	ELECT	470uF	20%	10V
C37	1-126-176-11	ELECT	220uF	20%	10V
C38	1-126-176-11	ELECT	220uF	20%	10V
C39	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C40	1-163-086-00	CERAMIC CHIP	3PF		50V
C41	1-163-059-00	CERAMIC CHIP	0.01uF	10%	50V
C42	1-163-222-11	CERAMIC CHIP	5PF	0.25PF	50V
C43	1-164-222-11	CERAMIC CHIP	0.22uF		25V
C46	1-164-222-11	CERAMIC CHIP	0.22uF		25V
C47	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C48	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C49	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
		< FILTER >			
CF1	1-577-072-11	FILTER, CERAMIC			
CF2	1-567-097-61	FILTER, CERAMIC			
CF3	1-567-097-61	FILTER, CERAMIC			
		< VARIABLE CAPACITOR >			
CV1	1-151-628-11	CAP, VARIABLE			
		< DIODE >			
D1	8-719-911-19	DIODE 1SS119			
D2	8-719-911-19	DIODE 1SS119			
D3	8-719-911-19	DIODE 1SS119			
D4	8-719-911-19	DIODE 1SS119			
D5	8-719-911-19	DIODE 1SS119			
D6	8-719-200-02	DIODE 10E2			
D7	8-719-911-19	DIODE 1SS119			
D8	8-719-033-45	DIODE MTZJT-955.1A			
D9	1-810-027-11	LED BLOCK SL-2994-54TB (GREEN LED)			
		< IC >			
IC1	8-752-035-29	IC CXA1019S			
IC2	8-759-095-52	IC LC85631			

Ref.No.	Part No.	Description				Remarks
		< JUMPER RESISTOR >				
JR1	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR2	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR3	1-216-295-00	METAL CHIP	0	5%	1/10W	
JR5	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR7	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR8	1-216-295-00	METAL CHIP	0	5%	1/10W	
		< COIL >				
L3	1-402-464-11	ANTENNA, FERRITE-ROD (AM)				
L5	1-422-300-11	COIL, AIR-CORE (FM OSC)				
L6	1-406-028-00	COIL, OSC (AM OSC)				
		< TRANSISTOR >				
Q1	8-729-119-76	TRANSISTOR	2SA1175-HFE			
Q2	8-729-142-46	TRANSISTOR	2SC2001-LK			
Q3	8-729-119-76	TRANSISTOR	2SA1175-HFE			
		< RESISTOR >				
R1	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R2	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R3	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R4	1-216-035-00	METAL CHIP	270	5%	1/10W	
R5	1-216-071-00	METAL CHIP	8.2K	5%	1/10W	
R6	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R7	1-216-091-00	METAL CHIP	56K	5%	1/10W	
R8	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R9	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R10	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R11	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R12	1-216-096-00	METAL GLAZE	91K	5%	1/10W	
R13	1-216-222-00	METAL GLAZE	10K	5%	1/8W	
R14	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R15	1-216-222-00	METAL GLAZE	10K	5%	1/8W	
R16	1-216-222-00	METAL GLAZE	10K	5%	1/8W	
R17	1-216-246-00	METAL GLAZE	100K	5%	1/8W	
R19	1-216-222-00	METAL GLAZE	10K	5%	1/8W	
R20	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R21	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R22	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R23	1-216-121-00	METAL CHIP	1M	5%	1/10W	
R24	1-216-222-00	METAL GLAZE	10K	5%	1/8W	
R25	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R26	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R27	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
		< VARIABLE RESISTOR >				
RV1	1-228-790-00	RES, VAR, CARBON 50K (VOL)				

Ref.No.	Part No.	Description	Remarks
		< SWITCH >	
S1	1-571-478-11	SWITCH, SLIDE (BAND SELECT)	
S2	1-571-478-11	SWITCH, SLIDE (ALARM A RADIO/BUZZER)	
S3	1-571-478-11	SWITCH, SLIDE (ALARM B RADIO/BUZZER)	
S4	1-554-937-11	SWITCH, KEY BOARD (TIMER SET +)	
S5	1-554-937-11	SWITCH, KEY BOARD (TIMER SET -)	
S6	1-554-937-11	SWITCH, KEY BOARD (SNOOSE/DATE/SLEEP OFF)	
S7	1-554-937-11	SWITCH, KEY BOARD (ALARM A)	
S8	1-554-937-11	SWITCH, KEY BOARD (ALARM B)	
S9	1-554-937-11	SWITCH, KEY BOARD (RADIO ON/SLEEP)	
S10	1-554-937-11	SWITCH, KEY BOARD (RADIO OFF)	
S11	1-554-937-11	SWITCH, KEY BOARD (CLOCK)	
		< TRANSFORMER >	
T1	1-404-790-11	TRANSFORMER, IF (AM IF)	
⚠T2	1-450-547-11	TRANSFORMER, POWER	
		**********	
		MISCELLANEOUS	
		**********	
5	1-696-939-11	CORD, CONNECTION (18 CORE)	
⚠6	1-696-008-11	CORD, POWER	
SP1	1-503-082-00	SPEAKER	
		**********	
		ACCESSORIES & PACKING MATERIALS	
		**********	
*	3-387-400-01	INDIVIDUAL CARTON	
	3-756-518-21	MANUAL, INSTRUCTION (English)	
		**********	

HARDWARE LIST

#1	7-685-649-79	SCREW +P	3X14 TYPE2 NON-SLIT

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

9-957-691-11

Sony Corporation
Personal Telecommunications Group

English
93C0228-1
Printed in Japan
©1993.3
Published by Audio Corporate Planning Group